L 61695-65   EWT(m)   Peb   DIAAP   UR/0089/64/017/004/0313/0314

ACCESSION NR: AP5019462

AUTHOR: Frolov, V. V.

TITLE: Scientific Conference of MIFI (Moscow Engineering Physics Institute)

SOURCE: Atomnaya energiya, v. 17, no. 4, 1964, 313-314

TOPIC TAGS: nuclear physics conference

ABSTRACT: About 250 papers were presented at the annual scientific con-
ference of the MIFI, held in May 1964.   Among papers of interest to
nuclear scientists were those in the experimental nuclear physics section
chiefly devoted to the study of particles; theoretical nuclear physics
section (papers on "Moving branching points on a j-plane and their role
in the asymptote of strong reactions at great energies"; "On the prob-
ability of β-decay of nuclei"; "On spontaneous fissioning of nuclei");
two sections on experimental physics, including papers on neutron transfer
equations and water-boiling processes at reduced pressures; a section on
isotopes and the physics of nuclear radiations in which the following sub-
jects were treated: development of radioisotope methods for studying

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ACCESSION NR: AP5019462

properties of substances in industrial application; radioactive isotope and nuclear radiation analysis methods; study of the effects of nuclear radiation on solids. Papers on dosimetry and safety and on strength physics (materials engineering) were presented in sections devoted to these subjects. The electrophysical section heard papers on theoretical work on linear accelerators and high-energy particle separators; experimental work in the development of linear accelerators and particle separators; and works on physical electronics. Many students were among those presenting papers.

ASSOCIATION: none

SUBMITTED: 00   ENCL: 00   SUB CODE: NP
NR REF SOV: 000   OTHER: 000   JPRS

Card 2/2

L 27599-66   EWT(m)   IJP(c)

ACC NR: AP6018399

SOURCE CODE: UR/0089/65/019/003/0314/0316

AUTHOR: Frolov, V. V.

68
B

ORG: none

TITLE: Scientific conference of MIFI (Moscow Engineering and Physics Institute)

SOURCE: Atomnaya energiya, v. 19, no. 3, 1965, 314-316

TOPIC TAGS: muon hydraulic resistance, mass spectrometry, linear accelerator, electron accelerator, ion beam, laser beam, physics conference, erosion, gas discharge, nuclear reactor

ABSTRACT: The annual MIFI scientific conference hear 210 reports in 53 sessions of 22 sections when the 2000 participants met 5-21 May 1965. Among the most interesting reports and subjects discussed were: the energy spectra of cosmic muons at great zenith distances in the 10^{11}-10^{12} ev energy range; the construction of a strictly phenomenologic l approach to the theory of the nucleus and the problem of many bodies; new synthetic methods of calculation of distribution of neutron fields in reactors; hydraulic resistance and heat exchange upon longitudinal flow around a group of rods; the study of molecular processes with mass spectrometry; the influence of electric fields on photographic emulsion density; the influence of inhomogeneities in shielding on its effectiveness; theoretical and experimental studies of linear electron accelerators; the effect of erosion /

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L 27599-66

ACC NR: AP6018399   O

processes on metal surfaces in gas discharges at low pressure under the influence
of ion and laser beams; binary injections in p-i-n silicon structures; and many
others, not described in this report, in the sections on automatics and telemechanics,
electronics, plasma physics, cybernetics, instrument building and design, strength
physics and others. /JPRS/

SUB CODE: 20, 18 / SUBM DATE: none

Card 2/2

ACC NR: AP6032409   SOURCE CODE: UR/0089/66/021/003/0220/0222

AUTHOR: Frolov, V. V.

ORG: none

TITLE: MIFI Scientific conference

SOURCE: Atomnaya energiya, v. 21, no. 3, 1966, 220-222

TOPIC TAGS: physics conference, high energy particle, meson, hyperon, neutron
distribution, plastic deformation, electron flux, neutron diffusion, eigenvalue,
metal zone melting

ABSTRACT:
    The twenty-third annual scientific conference of the Moscow
Engineering Physics Institute (MIFI) was held from 5 to 20 May 1966.
Approximately 900 participants from various scientific-research
institutes, universities, and factories heard about 300 reports by
the instructors and students of the Institute and also by colleagues
from other scientific institutions.

    Several highly interesting papers were presented on the physics
of high-energy particles. In particular, V. V. Borog and his co-

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ACC NR: AP6032409

workers reported on experiments on electron-photon cascades produced in iron by muon cosmic rays with energies of $8 \cdot 10^{11}$ ev performed with an ionization calorimeter. The results were compared with theoretical cascade curves for various values of radiation units with the best agreement obtained when the radiation unit $t = 14$ g/cm^2.

V. S. Demidov and others reported on the pair production of strange particles in research conducted with the 105-cm MIFI propane-freon bubble chamber. The mass spectrum was obtained in the $K^0 \lambda^0$-system. Demidov and his colleagues also studied the production of K^0-mesons and λ-hyperons on hydrogen and light nuclei by 4 Bev/c π^--mesons. The energy and momentum distributions of the K^0-mesons and the λ-hyperons were also determined.

Of paramount interest in the field of reactors were the reports delivered by V. V. Khromov, I. S. Slesarev, A. M. Kuz'min, and others devoted to numerical methods of calculating reactors. Precise ways of determining a neutron field, and also effective methods of finding the criticality conditions and neutron distribution in multi-dimensional geometries were presented. The algorithms proposed

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ACC NR: AP6032409

significantly shorten computer operation time and are particularly useful in variational calculations.

In reports on reactor theory, S. B. Shikhov, L. K. Shishkov, and others presented proof for the existence and uniqueness of the solution of neutron transport equations and of problems of nonlinear reactor dynamics (self-oscillating regimes). Shishkov and Shikhov also collaborated on a paper dealing with a theory of higher order perturbations for solving certain reactor calculation problems. It was reported that the variation of the neutron transport operator eigenvalue and its eigenfunction (neutron flux) can be obtained without a complete set of eigenfunctions. Even in the first approximation this method permits a more exact calculation of K_{eff} than with the generally accepted perturbation theory.

In the area of the physics of shielding, I. E. Konstantinov and B. Ya. Narkevich reported the development of a new method of measuring spatial distribution of doses and fluxes of electrons during the passage of a thin beam of β-particles through a light material using a scintillation spectrometer. This method, based on the

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ACC NR: AP6032409

use of thin scintillating films and the designed detector, makes possible measurements without addition of perturbations to the investigated object. The absorbed dose is determined exactly both within and outside the beam.

A report on experimental research conducted by S. B. Stepanov and his colleagues on the diffusion parameters of hydrogeneous media evoked great interest among the conferees. In this work, the interrelationship between the neutron diffusion coefficient and the self-diffusion coefficient of the medium was determined.

V. I. Deyev and G. P. Dubrovskiy reviewed the results of their experimental research on heat transfer and critical heat loads in volume boiling of water under a vacuum. It was shown that the boiling of water and liquid metals under low pressures is similar.

L. S. Kokorev and others described a new method of determining the contact angle in liquid metal wetting by measuring the maximum temperature in a gas bubble. New data was presented on the angle of contact for sodium and potassium.

Card 4/6

ACC NR: AT6032409

Growing of molybdenum monocrystals by the zone melting method was described by Ye. M. Savitskiy and G. I. Burkhanov. A. A. Rusakov and others studied the fine structure of molybdenum mono-crystals grown by precipitation from the gas phase. A. I. Yevstyukhin and his colleagues reported on the peculiarities of plastic deformations of molybdenum monocrystals during rolling and tension, and N. F. Litvinova reported on methods of determining the gas content in pure molybdenum.

In a series of papers, P. L. Gruzin, L. A. Alekseyev, G. N. Shlokov, and others presented the results of investigations of properties of solids by the Mössbauer method. Of particular note was a report on research conducted on the properties of stanniferous ferrites of the magnesium-manganese system for which the intrinsic effective magnetic fields of the Sn^{119} nuclei and their temperature variations were determined from the Zeeman patterns. The practical uses of the Mössbauer method for solving technological problems in obtaining ferrites with the necessary magnetic properties were also discussed.

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ACC NR: AP6032409

Most of the reports will be published in the regular MIFI
collections of scientific articles. [FSB: v. 2, no. 11]

SUB CODE: 20,18 / SUBM DATE: nono

Card 6/6

UR/

ACC NR: AM6032024   (A)   Monograph

Dubovskiy, B. G.; Kamayev, A. V.; Kuznetsov, P. M.; Vladykov, G. M.; Gurin, V. N.; Murashov, A. P.; Markelov, I. P.; Kochergin, V. P.; Vaymugin, A. A.; Sviridenko, V. Ya.; Diyev, L.V.; Bogatyrev, V.K.; Vavilov, V. V.; Frolov, V. V.

Critical parameters of systems with fissionable materials and nuclear safety; a handbook (Kriticheskiye parametry sistem s delyashchimisya veshchestvami i yadernaya bezopasnost'; spravochnik) Moscow. Atomizdat. 1966. 225 p. biblio., diagrs., tables. 9000 copies printed.

TOPIC TAGS: nuclear safety, nuclear reactor, homogeneous nuclear reactor, heterogeneous nuclear reactor, chain reaction

PURPOSE AND COVERAGE: This handbook is intended for specialists concerned with the problems of assuring nuclear safety as well as for persons calculating, designing, operating, and studying the physics of nuclear reactors of various types, as well as for students in associated departments. The book discusses methods of creating and maintaining conditions which will exclude the possibility of an accidentally chain reaction during the processing, storage, and transportation of fissionable materials. The book is based mainly on the results of studies published before 1965. In addition to information on critical parameters of systems with fissionable materials, the authors considered it useful to include in the handbook the fundamental concepts of criticality, principles for assuring nuclear safety, a review of cases of the occurrence of uncontrolled chain reactions,

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ACC NR: AM6032824

and the basic standards for nuclear safety. The authors express appreciation to M. P. Rodionov, T. I. Sukhoverkhova, M. A.Gavrilova, and L. V. Antonkina for their valuable assistance. There are 64 references, 30 of which are Soviet.

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SUB CODE: 18/   SUBM DATE: 20May66/   ORIG REF: 030/   OTH REF: 034

Card 2/2

FROLOV, V.V. (Moskva)

Optimal system of radiating fins. Izv. AN SSSR Energ. i transp.
6:750-755 N-D '64.   (MIRA 18:3)

L 32031-66   EWT(m)/EWP(y)/T/EWP(t)/ETI/EWP(k)   IJP(c)   JD/WW/HM/JG

ACC NR: AP6019426   (N)   SOURCE CODE: UR/0135/66/000/006/0007/0010

AUTHOR: Frolov, V. V. (Doctor of technical sciences); Gorshkov, A. I. (Candidate of technical sciences)

ORG: none

TITLE: Effect of hydrogen on the formation of porosity during argon-shielded arc welding of titanium

SOURCE: Svarochnoye proizvodstvo, no. 6, 1966, 7-10

TOPIC TAGS: titanium alloy, titanium alloy welding, argon shielded welding, alloy weld, weld porosity, hydrogen porosity, arc welding/VT1-2 alloy, VT14 alloy, VT15 alloy

ABSTRACT: The relationship between porosity formation and hydrogen diffusion in titanium alloy welds has been investigated. VT1-2, VT14, and VT15 alloy sheets 2.5, 3.0, and 1.2 mm thick were welded under the following respective conditions: current 165, 250 and 110 a, arc voltage 10, 11 and 8 v, and welding speed 0.4, 0.4 and 0.7 cm/sec. The experiments showed that the maximum desorption of hydrogen occurred in the front part of the melting pool. Desorption of hydrogen prevailed upon diffusion at all concentrations of hydrogen in titanium. Diffusion of hydrogen depends on the heat input: an increase of heat input from 300 to 900 kg·cal/cm increased the volume of diffused hydrogen from $2.1 \cdot 10^{-4}$ to $16 \cdot 10^{-4}$ cm^3 and the weld porosity about 8 times.

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UDC: 621.791.753.93.019:669.295.5

L 32031-66

ACC NR: AP6019426

Time that the metal remains in the liquid state greatly affects the amounts of diffused and desorpted hydrogen and the porosity in the weld; all three decrease if metal remains for a prolonged period of time in the liquid state, i.e., with increasing heat input. There is, however, a critical value of heat input. An increase of heat input to the values below the critical increases the amount of porosity. Only after the critical value has been exceeded does the amount of porosity drop with a further increase of heat input. Orig. art. has: 8 figures and 4 tables.   [AZ]

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 009/ ATD PRESS:5019

Card 2/2

FROLOV, V.Ya. (Leningrad)

Spring snow. Priroda 52 no.3:127 '63.
(Kursk Province—Snow)   (MIRA 16:4)

FROLOV, Viktor Yakovlevich, tokar'; CHERNOV, Ye., red.; LIL'YE, A., tekhn. red.

[Everyone can have skilful hands] Umelye ruki mogut byt' u kazhdogo. [Moskva] Moskovskii rabochii, 1957. 46 p.   (MIRA 11:5)

1. Moskovskiy zavod kontrol'no-izmeritel'nykh priborov (for Frolov)
        (Technical education)

FROLOV, V.Ya.

On the necessity of clarifying some regulations of the Operating
Rules. Zhel.dor.transp. 39 no.7:61-64 Jl '57.   (MLRA 10:8)

1.Zamestitel' nachal'nika tekhnicheskogo otdela Upravleniya
Oktyabr'skoy dorogi.
                    (Railroads--Management)

FROLOV, V.Ya.

Design and operation problems of ponds and small reservoirs.
Trudy Lab. ozeroved. 7:148-151 '58.

(MIRA 11:10)

1.Laboratoriya ozerovedeniya AN SSSR.
          (Farm ponds) (Reservoirs)

FROLOV, V. Ya.

Profile grinding at the Gorkiy Automobile Plant. Biul.tekh.-ekon.
inform. no.3:32-34 '61.   (MIRA 14:3)
                    (Grinding and polishing)

FOLOV, V.Ia.

Development of erosion produced by water in Kursk and Voronezh
Provinces. Trudy Lab. ozeroved. 13:185-221 '61.
(MIRA 14:10)
(Kursk Province--Erosion)
(Voronezh Province--Erosion)
(Reservior sedimentation)

FROLOV, V.Ya.

Slope asymmetry of the gully and ravine network of Kursk Province and the role of firns in their formation. Izv. AN SSSR. Ser. geog. no.3:59-63 '64.   (MIRA 17:6)

1. Laboratoriya ozerovedeniya AN SSSR.

FROLOV, V. Ye.

USSR/ Miscellaneous - Ceramics manufacture

Card 1/1   Pub. 123 - 7/16

Authors   : Nagornyy, A. I.; Frolov, V. E.; Lebedev, M. A.; Khokhol'kova, L. A.;
             and Mikhoylyants, O. A.

Title   : Manufacture of ceramic sewer pipes from Lengersk infusible clay

Periodical : Vest. AN Kaz. SSR 12, 63-67, Dec 1954

Abstract   : The possibility of manufacturing high-quality ceramic sewer pipes
             from infusible Lengersk clays are discussed. The technological
             process employed in the manufacture of refractory tubes is
             described. Two USSR references (1941 and 1952). Tables.

Institution :   .....

Submitted : M. I. Goryaev, Active Member of Acad. of Sc. Kaz-SSR

BRAGINSKIY, K.I.; FROLOV, Ya.A.

Mathematical analysis of the behavior of glass during molding.
Stek. i ker. 18 no.10:22-26 O '61. (MIRA 14:11)
(Glass manufacture)

GUR'YANOVA, M.F.; FROLOV, Ya.A.

"Granulating" a glass batch with large-grained sand. Stek. i ker.
18 no.10:26-27 O '61.   (MIRA 14:11)
                    (Glass manufacture)

AKRIDIN, A., inzh.; FROLOV, Ye., inzh.

Two-cantilever roof panels measuring 3x12 made of keramzit concrete.
Na stroi.Ros. 3 no.6:27-28 Je '62.   (MIRA 16:7)
        (Keramzit) (Roofing, Concrete)

FROLOV, Ye.I.

VASSOYEVICH, N.B., prof., doktor geol.-miner.nauk; ANDREYEV, P.F., kand. khim.nauk; BELYAKOV, M.F., kand.geol.-miner.nauk; BARANOVA, T.E., nauchnyy sotrudnik; BUSHINSKIY, G.I., prof.; GEKKER, R.F., prof., doktor biolog.nauk; GROSSGEYM, V.A., kand.geol.-miner.nauk; ITENBERG, S.S., dotsent; KRISHTOFOVICH, A.N.; LYUBOMIROV, B.N., kand.geol.-miner.nauk; PORFIR'YEV, G.S., kand.geol.-miner.nauk; POKROVSKAYA, I.M., prof., doktor geol.-miner.nauk; RADCHENKO, O.A., kand.khim.nauk; RUKHIN, L.B., prof., doktor geol.-miner.nauk; TORGOVANOVA, V.B., gidrogeolog; USPENSKIY, V.A., kand.khim.nauk; FROLOV, Ye.F., kand.geol.-miner.nauk; FURSENKO, A.V.; KHAIN, V.Ye., prof., doktor geol.-miner.nauk; SHARONOV, V.V., prof., doktor fiziko-matem.nauk; YASHCHURZHINSKAYA, A.B., vedushchiy red.; SOKOLOVA, Ye.V., tekhn.red.   (Continued on next card)

VASSOYEVICH, N.B.--(continued) Card 2.
    [Handbook for field geologists and petroleum prospectors]
    Sputnik polevogo geologa - neftianika. Leningrad, Gos.nauchno-
    tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, Leningr.otd-nie,
    1952. 504 p.
                                                    (MIRA 12:12)

    1. Groznenskiy ordena Trudovogo Krasnogo Znameni neftyanoy insti-
    tut (for Itenberg). 2. Deystvitel'nyy chlen AN Ukrainskoy SSR
    (for Krishtofovich). 3. Chlen-korrespondent AN Belorusskoy SSR
    (for Fursenko).
        (Petroleum geology--Handbooks, manuals, etc.)

FROLOV, Nikolay Fedorovich; FROLOV, Yevgeniy Fedorovich; PERSHINA, E.G.,
vedushchiy redaktor; SHIKIN, S.T., tekhnicheskiy redaktor;

[Geological observations and structures during the drilling of
deflected wells) Geologicheskie nabliudeniia i postroeniia pri
burenii iskrivlennykh skvazhin, Moskva, Gos.nauchno-tekhn.izd-
vo neft. i gorno-topli nri lit-ry, 1957. 183 p.   (MLRA 10:4)
                    (Oil well drilling)

BROD, Ignatiy Osipovich; FROLOV, Yevgeniy Fedorovich; YERSHOV, P.R.,
    vedushchiy redaktor; TROFIMOV, A.V., tekhnicheskiy redaktor

[Search and exploration for oil and gas deposits] Poiski i razvedka
neftianykh i gazovykh mestorozhdenii. Izd. 2-oe, perer. i dop.
Moskva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-
ry, 1957. 674 p.   (MIRA 10:1)
          (Petroleum)   (Gas, Natural) (Prospecting)

SIVOKHINA, N.B.; FROLOV, Ye.F.

Determining the accuracy of well surveying measurements and calculating
errors. Trudy VNII no.11:321-339 '57.   (MIRA 10:11)
                    (Oil wells--Measurement)

FROLOV, Ye. F.

FROLOV, Ye.F.; SERGANOVA, I.I.

Effect of well surveying errors on the accuracy of platform upland
structural maps. Trudy VNII no.11:340-346 '57.   (MLRA 10:11)
                    (Geology--Maps)

Frolov, Ye. F.

FROLOV, Ye.F.; SERGANOVA, I.I.

Projecting deflected well logs on a profile section. Trudy VNII no.11: 347-354 '57.   (MIRA 10:11)
    (Prospecting--Geophysical methods)   (Geology, Stratigraphic)

SHVETSOVA, I.R.; SKOLOV, Y.F.; SB [illegible]

Procedure for calculat[illegible] in determining the [illegible] position of wall bottoms and [illegible] section at the expense of wall deflection. Trudy VNII nr.14:[illegible] '[illegible].   (MIR 12:7)
                        (Petroleum engineering)

VASIL'YEV, Yu.S.; SIVOKHINA, N.B.; FROLOV, Ye.F.; CHERNOGLAZOVA, T.Ya.

Permissible deflections of bottom holes from the planned
position; a topic for discussion. Neft. khoz. 39 no.4:14-20
Ap '61.   (MIRA 14:6)
                    (Oil well drilling)

FROLOV, Ye.F.

Basic surveying problems in oil and gas production. Trudy VNII
no.36:3-12 '62.   (MIRA 15:11)
    (Gas, Natural—Geology) (Petroleum geology)

FROLOV, Ye.F.

Results of preliminary studies of the accuracy of calculating
petroleum reserves. Trudy VNII no.36:154-166 '62.   (MIRA 15:11)
(Petroleum geology)

SIVOKHINA, N.B.; FROLOV, Ye.F.; CHERNOGLAZOVA, T.Ya.

Intersecting of the shafts of deflected wells. Trudy VNII no.36:
13-18 '62.   (MIRA 15:11)
(Oil well drilling)

FROLOV, Ye.F.; SIVOKHINA, N.B.; DEMENT'YEV, L.F.; KOCHETOV, M.N.; MOLOTOV, N.A.

Preliminary method of evaluating the accuracy of calculating petroleum reserves by the volume method.   Trudy VNII no.36:38-56
'62.   (MIRA 15:11)

(Petroleum geology)

FROLOV, Ye.I.

Rare case of perforation of the intestinal wall by foreign bodies
with the formation of an arteriovenoys aneurysm. Khirurgiia 38
no.10:124-125 O '62.   (MIRA 15:12)

1. Iz gospital'noy khirurgicheskoy kliniki (i. o. zav. kafedroy -
dotsent G.N. Zakharova) Saratovskogo meditsinskogo instituta.
    (ABDOMINAL ANEURYSM) (INTESTINES—FOREIGN BODIES)

PERESLEGIN, Viktor Ignat'yevich; FROLOV, Ye.P., otv. red.; MEDVEDEVA,R.,
   red. izd-va; TELEGINA, T., tekhn. red.

[Regime of economy during the period of the building of com-
munism]Rezhim ekonomii v period stroitel'stva kommunizma.
Moskva, Gosfinizdat, 1962.   86 p.   (MIRA 16:2)
            (Industrial management)

Frolov, Ye. P.

Ganshtak, Vladimir Iosifovich

Ocherki po ekonomike mashinostroitel'noy promyshlennosti SSSR
   (Essays on the Economics of the Machine-building Industry
   of the USSR) Simferopl', Mashgiz, 1957. 418 p. 6,000
   copies printed.

Ed.: <u>Frolov, Ye. P.</u>; Ed. of Publishing House: Bogolyubova, I.Yu.
   (Deceased); Tech. Ed.: El'kind, V.D.

PURPOSE: The book is intended for a wide circle of engineers,
   technical personnel, and economists in the machine-building
   industry, and also for scientific workers and students in
   institutions of higher learning.

COVERAGE: The book discusses the following basic problems of
   the economics of the USSR's machine-building industry: the
   development of machine building as a leading branch of industry;
   technical developments in machine building; concentration,
   specialization, cooperation, and combination in the machine-
   building industry; principal and turnover funds; personnel,

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Essays on the Economics of the Machine-building Industry (Cont.) 305

cadres, labor productivity, and wages; cost of production
and profitableness in machine building. The book also
indicates ways and means for greater utilization of resources
in the further growth and improvement of production. According
to the foreword, this is a first attempt to consider the
principal questions of economics of machine building on the
basis of their connections and interrelations. The text is
abundantly illustrated with statistical data and examples.
There are 250 Soviet references.

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TROITSKIY, Petr Aleksandrovich; STUCHEVSKIY, Mark Pavlovich; NEYMAN, Z.N., inzh., retsenzent; FROLOV, Ia.P., inzh., retsenzent; BOGINSKIY, M.N., inzh.-ekon., red.; TKACHUN, A.I., red.izd-va; EL'KIND, V.D., tekhn.red.

[Cost planning for machinery manufacturing plants; methods and practice] Planirovanie sebestoimosti na mashinostroitel'nom zavode; metodika i praktika. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 249 p.   (MIRA 12:4)
            (Machinery industry--Costs)

28(3)   S/028/60/000/02/022/024
                                         D041/D002

AUTHOR: Frolov, Ye.S.

TITLE: Conference on Complete Normalization of the Produc-
               tion Process Elements

PERIODICAL: Standartizatsiya, 1960, Nr 2, pp 59 - 60   (USSR)

ABSTRACT: Information is given on a conference convened in
               December 1959 by the Moskovskiy dom nauchno-
               tekhnicheskoy propagandy im.F.E. Dzerzhinskogo
               (Moscow House of Scientific-Technical Propaganda
               imeni F.E. Dzerzhinskiy) and the Nauchno-issledo-
               vatel'skiy institut tekhnologii i organizatsii
               proizvodstva (Scientific Research Institute of
               Technology and Production Organization). Delegates
               from about 150 plants, institutes and design
               offices were present. Professor V.V. Boytsov sta-
Card 1/5   ted in his report "Normalization—Bases of Mechani-

S/028/60/000/02/022/024
D041/D002

Conference on Complete Normalization of the Production Process
Elements

zation and _Automation_ of Production Processes" that
small-series production works are very little mecha-
nized and automated. The new trend of automation is
by means of special machines and automatic lines
with extensive use of _exchangeable units_. After an
analysis of parts classification and operations, it
can be assumed that about 40% of machine tools of
plants with small-series production output can be
fitted with special cutting equipment, and up to
90% of all equipment elements can be normalized in
the machine-tool industry. There are 72 unit-head
machine tools at a plant, they brought about an an-
nual economy of 2300 thousand rubles. Many of them
were assembled in a few weeks. They may be easily
taken apart and the unit heads rearranged into
different combinations. The idea suits other equip-

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S/028/60/000/02/022/024
D041/D002

Conference on Complete Normalization of the Production Process
Elements

ment, and plants will be able to mechanize and auto-
mate their equipment on their own. Engineer M.I.
Dobromyslin, in his report on the basic principles
of "agregatirovaniye" (unit-heads) of machine tools
said that types of unit-heads are normalized, and
unit-heads for machines and lines must be standar-
dized. Engineer I.Ya. Serdyukov spoke on experience
with the use of such machine tools, mentioning that
the "AS-19" unit-head machine cut down to 3.7 hours
the former 10.6 hours required for machining a
casing; 65 unit-head machine tools assembled at a
plant gave 2308 thousand rubles annual economy. Za-
vod im. Vladimira Il'iycha (Imeni Vladimir Il'iych
Plant) and Moskovskiy karbyuratornyy zavod (Moscow
Carburetor Plant) have acquired experience in com-
Card 3/5   bining the unit-head machine tools. Engineer V.V.

S/028/60/000/02/022/024
D041/D002

Conference on Complete Normalization of the Production Process
Elements

Kuz'min reported on the basic trends and methods
of the normalization of auxiliary equipment. Engi-
neer Sh.G. Rubin spoke of normalization of the
electric equipment elements and the possibilities
of automatic and semi-automatic welding with fre-
quently changing work. Engineer A.Z. Ramm reported
on unification of foundry equipment, ingot molds
and technological casting process elements for
large aluminum castings, saying that some plants
and institutes are now designing and using large
ingot molds and casting machines without any nor-
malization or unification of the major and auxi-
liary equipment, which considerably reduces the
economical gain. Candidate of Technical Science
V.V. D'yachenko spoke on typization and normali-
zation of welding technology and the importance
of special welding equipment consisting of nor-

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S/028/60/000/02/022/024
D041/D002

Conference on Complete Normalization of the Production Process
Elements

malized component units. Engineer Bryskin-Lyamin
discussed the problems of normalization of spe-
cial auxiliary foundry equipment and major foundry
equipment elements. Candidate of Technical Science
V.A. Leonov spoke on the normalization problems for
work processes and major and auxiliary equipment
of blank-stamping shops. Engineer I.G. Naydov re-
ported on technical and economic effects of over-
all normalization of all elements of technologi-
cal processes. The conference approved the new
trends and marked measures for practical appli-
cation.

Card 5/5

FROLOV, Ye. S. Cand Tech Sci -- (diss) "Study of the ~~operation~~ of ~~the~~ two-cycle piston vacuum pump." Mos, 1958. 10 pp (Min of Higher Education USSR. Mos Order of Lenin and Order of Labor Red Banner Higher Tech School im N. E. Bauman), 150 copies (KL, 52-58, 103)

Frolov, Yu.S.

14(1)   PHASE I BOOK EXPLOITATION   SOV/2472

Vsesoyuznyy nauchno-issledovatel'skiy i konstruktorskiy institut khimicheskogo
    mashinostroyeniya

Konstruirovaniye i issledovaniye kompressorov i vakuum-nasosov (Design and
    Investigation of Compressors and Vacuum Pumps) Moscow, Mashgiz, 1958.
    90 p. (Series: Its: Sbornik statey, 22) 5,000 copies printed.

Ed.: V.A. Rumyantsev, Engineer; Ed. of Publishing House: A.M. Monastyrskaya;
    Tech. Ed.: A.F. Uvarova; Managing Ed. for Literature on Machine Building and
    Instrument Construction (Mashgiz): V.V. Pokrovskiy, Engineer.

PURPOSE: This collection of articles is intended for scientists and engineers work-
    ing in the field of compressor manufacture, and also for students of vuzes special-
    izing in compressors and vacuum pumps.

COVERAGE: The booklet consists of five articles. The first article presents in-
    vestigation results and design data for determining resistances in strip-type
    automatic diaphragm values. The second articles presents for the first time
    results of the investigation of large diameter diaphragms used in diaphragm-
    type compressors. The third article presents, also for the first time, experi-
    mental results and methods for designing metallic packings for piston-compressor

Card 1/2

Design and Investigation of Compressors (Cont.)   SOV/2472

rods. The fourth article presents test results and theoretical data for de-
signing two-stage piston vacuum pumps. The last article presents data on
designing diffusion-type oil vacuum pumps. No personalities are mentioned.
References follow each article.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

Card 2/2   GO/gmp
                                                                      11-24-59

FROLOV, Ye.S., inzh.; LUBENETS, V.D., kand. tekhn. nauk.

Volume and energy characteristics of double-stage vacuum pumps
with valve distribution. Sbor. st. NIIKHIMMASH no.22:65-80 '58.
                    (Vacuum pumps)   (MIRA 11:6)

FROLOV, Ye.S., kand.tekhn.nauk

Slip coefficient for two-stage piston vacuum pumps. $I_{zv.vys.}$ ucheb.zav.; mashinostr. no.4:20-24 '59. (MIRA 13:4)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche im.Baumana. (Vacuum pump)

LUBENETS, V.D., kand.tekhn.nauk, dots.; FROLOV, Ye.S., kand.tekhn.nauk;
VASIL'YEV, V.I., inzh.; VLASOV, V.M., inzh.; ZAKHAROV, B.D., inzh.

Investigating the performance of the VN-120 vacuum-pump. Izv. vys.
ucheb.zav.; mashinostr. no.4:166-171 '59.   (MIRA 13:4)

1.Moskovskoye vyssheye tekhnicheskoye uchilishche im. Baumana.
                (Vacuum pumps)

SOV/122-59-3-5/42

AUTHOR: Frolov, E.S., Engineer

TITLE: On the Design of Two-Stage Vacuum Piston Pumps (O
           konstruirovanii dvukhstupenchatykh porshnevykh vakuum-
           nasosov)

PERIODICAL: Vestnik Mashinostroyeniya, 1959, Nr 3, pp 20-23 (USSR)

ABSTRACT: An investigation carried out at the Moscow Technical
           University (MVTU) Imeni Bauman is reported, whose
           object was the determination of the minimum permissible
           ratio of the swept volumes of the first and second stages
           in a vacuum pump and the effect of the volume of the
           inter-stage container on this ratio and on the behaviour
           of the pump. Changing the volume ratio was accomplished
           by varying the speed of the second stage. An additional
           test was carried out with the second-stage volume
           reduced by a pressed-in cylinder liner. The cross-
           section of the stage is shown in Fig 1. The swept volume
           ratio was varied between 1.0 and 0.1. Fig 2 is a plot of
           the volumetric output against the vacuum achieved at
           different stage volume ratios. Fig 3 shows the inter-
           mediate pressure as a function of the same ratio together
Card 1/3   with the achieved vacuum and illustrates the negligible

SOV/122-59-3-5/42

On the Design of Two-Stage Vacuum Piston Pumps

effect of the intermediate on the final pressure vacuum. Fig 4 shows the intermediate pressure as a function of the final vacuum for different stage volume ratios. Fig 5 illustrates the same dependence carried to migh higher final pressures. A reduction in the stage volume ratio leads to a more even distribution of pressure ratios by stages and thus reduces the overall power consumed. The recommended ratio is 0.15 to 0.2. The volumetric output lost thereby (4-10%) can be restored by increasing the mean piston speed of the second stage up to 3-4 m/sec. This is stated to raise the putput by a factor of 3. A two-stage pump so designed under the direction of Lubents, V.D., Candidate of Technical Sciences, Lecturer, based on the vacuum pump of the Shebekino Mach.-Building Works (Shebekinskiy Mashino-stroitel'nyy Zavod) is illustrated in cross-section in

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On the Design of Two-Stage Vacuum Piston Pumps

Fig 6.   In this design the second stage acts as the
control (spool) valve for the first stage.
There are 6 figures and 3 Soviet references.

Card 3/3

AUTHOR: Frolov, Ye.S.

TITLE: Investigation of the Operation of a Two-Stage Vacuum
            Piston Pump (Issledovaniye raboty dvukhstupenchatogo
            porshnevogo vakuum-nasosa)

PERIODICAL: Vestnik Mashinostroyeniya, 1959, Nr 3, p 87 (USSR)

ABSTRACT: Author's summary of a dissertation submitted to the
            Moscow Technical University (Moskovskoye Vyssheye
            Tekhnicheskoye Uchilishche. Ordena Lenina I Ordena
            Trudovogo Krasnogo Znameni Imeni Baumana) for the
            attainment of the Degree of Candidate of Technical
            Sciences.   On the basis of experimental work, the
            volumetric and power properties of the vacuum pump have
            been established;   the coefficients which characterise
            the pump operation have been formulated. The components
            of the coefficient of evacuation and the relationship
            between the volumes of the two stages, appropriate in
Card 1/2 practice, have also been found. The effect of the

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Investigation of the Operation of a Two-Stage Vacuum Piston Pump

mean piston speed, the cross-sectional area of the
cylinder ports and the effect of the angular range of
port opening on the output and degree of evacuation
produced by the pump have been established.

Card 2/2

KOZLOV, V., inzh.; FROLOV, Ye., kand.tekhn.nauk

Measurement of the temperature of a working body in the cylinder of a heat engine. Khol.tekh. 37 no.4:9-13 Jl-Ag '60.

(MIRA 13:11)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche im. N.E.Baumana.
    (Compressors)   (Temperature—Measurement)

ZEDGINIDZE, G.P.; FROLOV, Ye.S., kand. tekhn. nauk, retsenzent;
    STROGANOV, L.P., inzh., red.; DEMKINA, N.F., tekhn. red.

[Measuring the temperature of rotating machine parts]Iz-
merenie temperatury vrashchaiushchikhsia detalei mashin.
Moskva, Mashgiz, 1962. 270 p.   (MIRA 15:10)
        (Thermometry)

GOLOVINTSOV, A.G., doktor tekhn.red. prof. [deceased]; RUMYANTSEV,
V.A., dots.; AIDASHEV, V.I.; PESHTI, Yu.V.; PLASTININ, P.I.;
SUSLOV, A.D.; FROLOV, Ye.S.; YAMINSKIY, V.V.; STRAKHOVICH, K.I.,
doktor tekhn.nauk, prof., retsenzent; PALEYEV, N.M., inzh., red.

[Rotary compressors] Rotatsionnye kompressory. [By] A.G.
Golovintsov i dr. Moskva, Izd-vo "Mashinostroenie," 1964.
314 p.   (MIRA 17:7)

1. Fakul'tet teplovykh i gidravlicheskikh mashin Moskovskogo
vysshego tekhnicheskogo uchilishcha imeni N.Ye. Baumana
(for all except Strakhovich, Paleyev).

KATSIGRAS, G.; SERGEYEV, A.; FROLOV, Yu.

     Improving the repairing of oil pumps. Avt.transp. 40 no.4:
     25-27 Ap '62.   (MIRA 15:4)
          (Oil hydraulic machinery--Maintenance and repair)

GRAMENITSKIY, V.N.; FROLOV, Yu.A.; KHANSUVAROV, K.I.

Grade 0,02 standard manometer with measurement limits from
0 to 2,5 kgf/cm². Izm.tekh. no.1:19-20 N '61.
                                           (MIRA 14:11)
          (Manometer)

ANASTASIYEV, Petr Ivanovich; ZELENETSKIY, Mikhail Mikhaylovich;
     FROLOV, Yuriy Aleksandrovich; KRASOVSKIY, K.F., red.; BUL'DYAYEV,
     N.A., tekhn. red.

     [Overhead electric power distribution lines of industrial enter-
     prises]Vozdushnye linii elektroperedachi promyshlennykh pred-
     priiatii. Moskva, Gosenergoizdat, 1962. 279 p.   (MIRA 15:12)
     (Electric power distribution) (Electric lines—Overhead)

ANASTASIYEV, Petr Ivanovich; FROLOV, Yuriy Aleksandrovich;
    KAMINSKIY, Ye.A., red.; FRIDKIN, L.M., tekhn. red.

    [Overhead power transmission lines with carrying capacity
    up to 1000 volts] Vozdushnye linii do 1000 v. Moskva, Gos-
    energoizdat, 1963. 87 p. (Biblioteka elektromontera, no.87)
                                                (MIRA 16:5)
            (Electric lines--Overhead)

ANASTASIYEV, Petr Ivanovich; FROLOV, Yuriy Aleksandrovich;
      KARSAULIDZE, A.N., red.

      [Construction and erection of 3-10 kv. lines; construc-
      tion operations] Sooruzhenie i montazh linii 3-10 kv;
      stroitel'nye raboty. Moskva, Energiia, 1964. 46 p.
      (Biblioteka elektromontera, no.131)   (MIRA 17:9)

ZVENIGORODSKIY, Iosif Solomonovich; FROLOV, Yuriy Aleksandrovich;
        KAYETANOVICH, M.M., red.

    [Steel wires and busbars in electrical networks with
    ratings up to 1,000 volts] Stal'nye provoda i shiny v
    elektricheskikh setiakh do 1 000 v. Moskva, Izd-vo
    "Energiia," 1964. 55 p. (Biblioteka elektromontera,
    no.125)   (MIRA 17:6)

ANASTASIYEV, Petr Ivanovich; FROLOV, Yuriy Aleksandrovich;
    KARSAULIDZE, A.N., red.

[Construction and erection of 3-10 kv. power transmission
lines; erection operations] Soorushenie i montazh linii
3-10 kv; montazhnye raboty. Moskva, Energiia, 1965. 47 p.
(Biblioteka elektromontera, no.155)   (MIRA 18:6)

FROLOV, Yu.F.

The DSP-80 electric-arc steel furnace with an 80-ton capacity.
Biul.tekh.-ekon.inform. no.11:8-10 '59. (MIRA 13:4)
(Electric furnaces)

56994 69035

S/078/60/005/05/10/037
B004/B016

2/.1320
5.2200
AUTHORS: Yegorov, G. F., Fomin, V. V., Frolov, Yu. G., Yagodin, G. A.

TITLE: Solvate Forms of Zirconium- and Hafnium Nitrates With Tri-
               butyl Phosphate

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 5,
               pp. 1044-1050

TEXT: In the introduction, the authors mention in brief the problems dealt
with: preparation of zirconium with a minimum hafnium content, investigation
of the mechanism of the $(C_4H_9O)_3PO$ (TBP) extraction, investigation of the
solvate form. Next, they describe the purification of the reagents. The
partition coefficients of Zr and Hf were determined by means of Zr^{95} and
Hf^{181}. The resultant Nb^{95} was separated from Zr^{95} by means of MnO_2. The ex-
tractions were carried out at 20^0 and at a zirconium- and hafnium con-
centration of 10^{-5} moles/l. First of all, the extraction of nitric acid by
tributyl phosphate (TBP) at different acidity and concentration of the NO_3^-

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Solvate Forms of Zirconium- and Hafnium
Nitrates With Tributyl Phosphate

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ions was investigated. In this connection, the authors refer to papers by
A. S. Solovkin (Ref. 2), A. M. Rozen (Ref. 6), V. V. Fomin, and Ye. P.
Mayorova (Refs. 3,4,7). The existence of the complexes $TBP.HNO_3$ and
$TBP.2HNO_3$ assumed by the last-mentioned authors in Ref. 7, and the values of
their instability constants (0.22 and 0.00044) were confirmed experimentally
(Table 1). Xylene was used as the solvent for TBP. The dependence of the
nitric-acid extraction on the concentration of hydrogen ions and in the
presence of $NaNO_3$, NH_4NO_3, $LiNO_3$ or $Mg(NO_3)_2$ is shown in table 2. The
mechanism assumed of HNO_3 extraction holds in a wide range also in the
presence of an excess of NO_3^- ions. It is proved for the extraction of Zr and
Hf that the partition coefficients α are proportional to the concentration
of free TBP in the organic phase. The number of solvating TBP molecules was
determined from the dependence of $\log \alpha$ on $\log (TBP)_{org}$. Experimental data
for zirconium are presented in table 3, for hafnium in table 4. It resulted
that partition coefficients of Zr and Hf increased with increasing TBP con-

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Solvate Forms of Zirconium- and Hafnium
Nitrates With Tributyl Phosphate

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centration in the organic phase. On the basis of the diagram $\log \alpha$,
$\log(TBP)$ (Fig. 1), the formation of the solvate $Me(NO_3)_4 \cdot TBP$ results, for
low TBP concentrations and the solvate $Me(NO_3)_4 \cdot 2TBP$ for higher TBP con-
centrations. At HNO_3 concentrations of 5 moles/l the formation of more com-
plicated complexes is assumed, which, however, was not further investigated.
Figs. 2,3 depict the dependence of the partition coefficients of Zr and Hf
on the hydrogen-ion concentration and the concentration of the added
nitrates. The α-values decrease with decreasing hydrogen-ion concentration.
This decrease, however, depends on the type of the added nitrate. In the
presence of NH_4^+ and Na^+, bivalent ions, ZrO^{2+}, or $Zr(OH)_2^{2+}$ are dissolved.
The deviation of the dependence of α from linearity in the presence of Li^+
and Mg^{2+} is explained by a stronger hydration of these ions. There are
3 figures, 4 tables, and 7 references, 6 of which are Soviet.

SUBMITTED: February 4, 1959

Card 3/3

FROLOV, Yu.G.; OCHKIN, A.V.

Problems involved in the mechanism of extraction. Zhur.neorg.-
khim. 7 no.6:1486-1489 Je '62.   (MIRA 15:6)
                        (Extraction (Chemistry))

FROLOV, Yu.G.

Mechanism of the extraction of acids and the basicity of
extraction agents. Trudy MKHTI no.43:5-8 '63.
(MIRA 17:10)

SUDARIKOV, B.N.; FROLOV, Yu.G.; [...] [...] [...]

Some extraction properties of [...] [...] [...]
9-11 '6'.

SUDARIKOV, B.N.; FROLOV, Yu.G.; IL'ICHEV, V.A.; PUSHKOV, A.A.; ZAKHAROV-
       NARTSISSOV, O.I.; OCHKIN, A.V.

   Physicochemical properties of some n-aliphatic amines. Trudy
   MKhTI no.43:21-28 '63.
                                          (MIRA 17:10)

FROLOV, Yu.G.; SERGIYEVSKIY, V.V.

Reaction of sulfuric acid with tri-n-octylamine in organic solvents. Trudy MKHTI no.43:58-63 '63.

(MIRA 17:10)

ZVYAGINTSEV, O.Ye.; FROLOV, Yu.G.; SUDARIKOV, B.N.

Mechanism of the extraction of tetra- and hexavalent uranium
sulfates by tri- and di-n-octylamines. Trudy MKhTI no.47:134-
139 '64.   (MIRA 18:9)

FROLOV, Yu.G.; SERGIYEVSKIY, V.V.

Effect of n-octyl alcohol on the extraction of sulfuric acid
with tri n-octylamine. Zhur. neorg. khim. 10 no.3:697-702
Mr '65.   (MIRA 18:7)

ZVYAGINTSEV, O.Ye.; FROLOV, Yu.G.; CHEN' TSZIN'-BAN; VAL'KOV, A.V.

Extraction of sulfuric acid and uranyl sulfate with N-alkylanilines.
Zhur.neorg.khim. 10 no.4:981-985 Ap '65.   (MIRA 18:6)

ZVYAGINTSEV, O.Ye.; FROLOV, Yu.G.; PUSHKOV, A.A.; DUSHEK, B.

Extraction of inorganic acids by aniline derivatives. Zhur.
neorg. khim. 10 no.2:512-517 F '65.   (MIRA 18:11)

1. Submitted Sept. 16, 1963.

FALABINA, A.V.; TYUKAVKINA, N.A.; YASHINA, O.G.; MAKENO, L.F.; FROLOV, Yu.L.

Synthesis and properties of vinyl ethers of some higher phenols.
Izv.vys.ucheb.zav.;khim.i khim.tekh. 4 no.4:626-631 '61.

(MIRA 15:1)

1. Irkutskiy gosudarstvennyy universitet imeni Zhdanova, kafedra
vysokomolekulyarnykh soyedineniy i organicheskogo sinteza.
                        (Phenols) (Ethers)

FROLOV, Yu.L.; FILIPPOVA, A.Kh.; KALABINA, A.V.; POGODAYEVA, L.K.;
TYUKAVKINA, N.A.

Physical studies in the area of unsaturated aryl ethers and their
derivatives. Part 1: Spectra of vinyl substitutes ether of phenol.
Zhur.strukt.khim. 3 no.6:676-679 '62.   (MIRA 15:12)

1. Irkutskiy gosudarstvennyy universitet.
          (Phenol)   (Ethers—Spectra)

KALABINA, A.V.; DUBINSKAYA, E.I.; FILIPPOVA, A.Kh.; FROLOV, Yu.L.;
RATOVSKIY, G.V.

Synthesis of vinyl ethers of nitro- and halonitrophenols. Izv.
vys.ucheb.zav.; khim. i khim.tekh. 7 no.2:232-236 '64.

(MIRA 18:4)

1. Irkutskiy gosudarstvennyy universitet im. A.A.Zhdanova,
kafedra vysokomolekulyarnykh soyedineniy.

MAKSYUTIN, Yu.K.; FROLOV, Yu.L.; KALABINA, A.V.; SHEVELEVA, V.A.

Hydrogen bonding between phen ls and vi~yl and ary! ethers.
Zhur.fiz.khim. 38 no.11:2604-2607 N '64.   (MIRA 18:2)

1. Irkutskiy gosudarstvennyy universitet imeni Zhdanova.

FROLOV, Yu.L.; KALABINA, A.V.; FILIPPOVA, A.Kh.

Physical studies of unsaturated aryl ethers and their derivatives.
Part 2: Capacity of an oxygen atom of transmitting electron effects.
Zhur. struk. khim. 6 no.3:397-401 My-Je '65.

(MIRA 18:8)

1. Irkutskiy gosudarstvennyy universitet imeni A.A.Zhdanov.

FROLOV, Yu.L.

Calculating the π-electron structure of certain simple vinyl
ethers by the semiempirical method of a self-consistent MOLKAO
Field. Izv. vys. ucheb. zav.; fiz. 8 no.3:177-179 '65.
(MIRA 18:9)

1. Irkutskiy gosudarstvennyy universitet imeni A.A.Zhdanova.

FROLOV, Yu.M., inzh.

New method of installing grounding circuits. Mont. i spets.
rab. v stroi. 24 no.7:23-24 Jl '62. (MIRA 15:6)

1. Vsesoyuznyy trest po elektrifikatsii promyshlennykh
predpriyatiy tsentral'nykh rayonov SSSR.
(Electric currents—Grounding)

FROLOV, Yu.M., inzh.; MATSNEV, L.M., inzh.

Hand welding of aluminum box-shaped busducts. Mont. i spets. rab. v stroi. 25 no.3:15-16 Mr '63. (MIRA 16:2)

1. Vsesoyuznyy trest po elektrifikatsii promyshlennykh predpriyatiy tsentral'nykh rayonov SSSR.
(Bus conductors (Electricity)—Welding)

L-10258-66   EWT(d)/EWT(m)/EWP(c)/EWP(v)/T/EWP(t)/EWP(k)/EWP(h)/EWP(b)/EWP(1)/EWA(c)

ACC NR: AP5026766 JD/HM

SOURCE CODE: UR/0286/65/000/017/0048/0048

INVENTOR: Roshchin, V. V.; Grinenko, V. I.; Gusakov, G. I.; Frolov, Yu. M.; Novikov, V. I.; Turkov, I. I.

ORG: none

TITLE: Method of automatic TIG welding of fixed tube joints. Class 21, No. 174299

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 17, 1965, 48

TOPIC TAGS: welding, metal welding, TIG welding, automatic   welding, pipe

ABSTRACT: This Author Certificate introduces a method of automatic TIG welding of fixed joints of pipes of any thickness. The welding is done with the electrode vibrating across the groove according to a program determined by the torch motion. Filler wire is fed at the moment when the electrode crosses it. A modified method, in which the direction of welding is reversed after each pass in accordance with the program and the filler wire is fed correspondingly from two sides, is mentioned.   [MS]

SUB CODE: 13/ SUBM DATE: 13May64/ ATD PRESS: 4/60

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UDC: 621.791.753.9-462

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S/055/60/000/004/005/007XX
C111/C222

AUTHOR: Frolov, Yu. N.

TITLE: On Non-Homogeneous Equations of Infinite Order in a Generalized Derivative

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya I matematika, mekhanika, 1960, No. 4, pp. 3-13

TEXT: Let

(2) $f(z) = \sum_{k=0}^{\infty} a_k z^k$, $a_k \neq 0$ $(k=0,1,2,\ldots)$

be an entire function of the order q and of the type $\sigma \neq 0, \infty$. Let exist

(3) $\lim_{k \to \infty} k^{1/q} \sqrt[k]{|a_k|} = (\sigma e q)^{1/q}$.

Let $F(z) = \sum_{k=0}^{\infty} b_k z^k$ be an arbitrary function regular in $|z| < R \leq \infty$. Let the generalized derivative

(4) $D^n F = D^n(F,f) = \sum_{k=n}^{\infty} b_k \frac{a_{k-n}}{a_k} z^{k-n}$

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On Non-Homogeneous Equations of Infinite Order in a Generalized Derivative

be also regular in $|z| < R$. Let further $\varphi(t) = \sum\limits_{k=0}^{\infty} c_k t^k$ be an integral sum of the order ρ and finite type G_1. The author considers the equation

(7) $M(F) = \phi(z)$,

where the operator $M(F)$ is defined by

(5) $M(F) = \sum\limits_{k=0}^{\infty} c_k D^k F$.

Lemma: If $\varphi(z)$ is an entire function of the order ρ and of the type G_1, $\varepsilon > 0$ and arbitrary, $\mu > 0$ and fixed, then for a sufficiently large r there exists a circle within the annulus $r \leqslant |z| \leqslant (1+\mu)r$ on which

(8) $\ln |\varphi(z)| > -H(\mu)(G_1 + \varepsilon)|z|^\rho$,

where

$H(\mu) = \left[2 + \ln \frac{8e(1+\mu)}{\mu} \right] \left[2e(1+\mu) \right]^\rho$, $|z| \geqslant r > r_0(\varepsilon)$

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On Non-Homogeneous Equations of Infinite Order in a Generalized Derivative

Theorem 1: Let $\delta > 0$ be arbitrary, fixed and $\phi(z) = \sum \alpha_k z^k$ be a function regular in the circle

$$|z| < \gamma(r) = \frac{e^{\frac{(1+\delta)^\beta}{\beta}}}{1+\delta} \left[\frac{\mu^\beta(r) + \frac{\sigma_1 H}{\sigma}}{e} \right]^{1/\beta} ,$$

where $r > 0$, $H = \left[2 + \ln \frac{8e(1+\delta)}{\delta} \right] , \left[2e(1+\delta) \right]^\beta$, $\mu(r) = (r^\beta + \frac{\sigma_1}{\sigma})^{1/\beta}$. Then for every $r_1 < r$ there exists a particular solution of

(11) $M(F) = \phi(z)$

being regular in $|z| < r_1$.

Theorem 2: If $\phi(z) = \sum_{k=0}^{\infty} \alpha_k z^k$ is an entire function, then there exists a solution of (11) being entire too.
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